1. (Original) A controller for an electric machine, the controller comprising:

a switch coupled to the electric machine, having a plurality of power inputs, and operable to selectively couple one of the power inputs to the electric machine;

a first voltage input coupled to one of the power inputs of the switch, and configured to receive a first voltage, and operable to provide the first voltage to the switch;

an inverter coupled to a second voltage input and a second power input of the switch, and configured to be activated by a second voltage received at the second voltage input, to frequency-regulate the second voltage to generate a frequency-regulated voltage, and to provide the frequency-regulated voltage to the switch.

2. (Original) The controller of claim 1, further comprising a feedback monitor configured to monitor the frequency-regulated voltage, and to accordingly configure the inverter to regulate an inverter output duty cycle.

3. (Original) The controller of claim 1, further comprising a relay configured to relay an alternating current ("AC") source as the first voltage input, and to generate the second voltage using the AC source.

4. (Original) The controller of claim 1, further comprising a micro-controller configured to receive the first and the second voltages, to generate a soft control signal, and to selectively couple the first voltage and the frequency regulated voltage to the motor with the soft control signal applied to the switch.

5. (Cancelled).

6. (Cancelled).

7. (Original) The controller of claim 4, further comprising a summing module coupled to the micro-controller, and configured to generate different signals to represent the first voltage and the second voltage.

8. (Original) The controller of claim 1, further comprising a rectifying module coupled to the inverter module, and configured to provide power to the inverter module.

9. (Original) The controller of claim 1, and wherein the inverter comprises a half-bridge inverter.

10. (Original) The controller of claim 1, and wherein the first voltage indicates a high speed excitation, and the second voltage indicates a low speed excitation.

11. (Original) The controller of claim 1, and wherein the electric machine comprises a multiple-tapped motor, and the first voltage represents one of a plurality of motor speed at one operating frequency.

12. (Original) The controller of claim 11, and wherein the one operating frequency is 60 Hz.

13. (Original) The controller of claim 1, and wherein the electric machine comprises a single speed motor, and the first voltage represents a motor speed at one operating frequency.

14. (Original) The controller of claim 13, and wherein the one operating frequency is 60 Hz.

15. (Currently amended) A controller for an electric machine, the controller comprising:

a voltage input configured to receive a first voltage;

a relay module coupled to the voltage input, and configured to relay the first voltage and to generate a second voltage;

a half-bridge inverter coupled to the relay module, and configured to be activated by the second voltage, and to generate a frequency-regulated voltage;

a micro-controller coupled to the first and the second voltages, and configured to generate a soft control signal; and

a second relay coupled to the micro-controller, and configured to select an electric machine operating voltage from the first voltage and the frequency regulated voltage using the soft control signal.

16. (Original) The controller of claim 15, further comprising a feed monitor configured to monitor the frequency-regulated voltage and to accordingly configure the inverter to regulate an inverter output duty cycle.

17. (Cancelled).

18. (Cancelled).

19. (Original) The controller of claim 15, further comprising a summing module coupled to the micro-controller, and configured to generate different signals to represent the first voltage and the second voltage.

20. (Original) The controller of claim 15, further comprising a rectifying module coupled to the half-bridge inverter, and configured to provide power to the half-bridge inverter.

21. (Original) The controller of claim 15, and wherein the first voltage indicates a high speed excitation, and the second voltage indicates a low speed excitation.

22. (Original) The controller of claim 11, and wherein the electric machine comprises a multiple-tapped motor, and the first voltage represents one of a plurality of motor speed voltages at one operating frequency.

23. (Original) The controller of claim 18, and wherein the one operating frequency is 60Hz.

24. (Original) The controller of claim 11, and wherein the electric machine comprises a single speed motor, and the first voltage represents a motor speed at one operating frequency.

25. (Original) The controller of claim 11, and wherein the one operating frequency is 60Hz.

26. (Currently amended) A method of controlling an electric machine, the method comprising:

providing one source of unregulated electrical power selectively connected to the electric machine through a relay when a first speed is selected;

generating a second source of regulated electrical power when a second speed is selected, the second source being selectively connected to the electric machine through the relay; and

selectively switching the relay to connect the electric machine to the one source for operation of the electric machine corresponding to the first speed, and to the second source for operation of the electric machine corresponding to the second speed.

27. (Original) The method of claim 26, further comprising:

monitoring a DC bus voltage; and

adjusting an inverter output duty cycle at the inverter based on the DC bus voltage.

28. (Original) The method of claim 26, further comprising providing conventional line power to the one source of unregulated electrical power.

29. (Currently amended) The method of claim 26, and wherein generating the second source of regulated electrical power comprises activating ~~a half-bridge~~ an inverter connected to the one source of unregulated electrical power.

30. (Original) The method of claim 26, and wherein generating the second source of regulated electrical power comprises activating a half-bridge inverter connected to the one source of unregulated electrical power.

31. (Currently amended) The method of claim 30, wherein the half-bridge inverter includes no more than two power switches.

32. (Original) The method of claim 26, and wherein selectively switching the relay comprises:

generating a soft control signal at a micro-controller based on the first and the second speeds; and

applying the soft control signal at the relay.

33. (Original) The method of claim 26, further comprising:

detecting a summed voltage from voltages corresponding to the first and the second speeds;

inputting the summed voltage to an analog-to-digital converter; and

generating a soft control signal to select the switch.

34. (Original) The method of claim 33, further comprising:

disabling the switch such that no power is applied to the electric machine when the summed voltage exceeds a sum of the voltages corresponding to the first and the second speeds;

reading the summed voltage to the analog-to-digital converter; and

enabling the switch once the summed voltage comprises a voltage that corresponds to one of the first and the second speeds.

35. (Original) The method of claim 18, and wherein the electric machine comprises a multiple-tapped motor, the method further comprising running the multiple-tapped motor at the first speed with one operating frequency when the first speed is selected.

36. (Original) The method of claim 27, and wherein the one operating frequency is 60Hz.

37. (Original) The method of claim 18, and wherein the electric machine comprises a single speed motor, the method further comprising running the single speed motor at the first speed with one operating frequency when the first speed is selected.

38. (Original) The method of claim 29, and wherein the one operating frequency is 60Hz.

39. (Currently amended) A controller for an electric machine, the controller comprising:

an inverter configured to receive a first voltage, to be activated by the first voltage, to frequency-regulate the first voltage to generate a frequency-regulated voltage; and

a switch coupled to the inverter, configured to receive the frequency-regulated voltage and a second voltage, and to selectively apply one of the received voltages to the electric machine.

40. (Original) The controller of claim 39, further comprising a feedback monitor configured to monitor the frequency-regulated voltage, and to accordingly configure the inverter to regulate an inverter output duty cycle.

41. (Original) The controller of claim 39, further comprising a relay configured to relay an alternating current ("AC") source as the second voltage input, and to generate the first voltage using the AC source.

42. (Original) The controller of claim 39, further comprising a micro-controller configured to receive the first and the second voltages, to generate a soft control signal, and to selectively couple the second voltage and the frequency regulated voltage to the motor with the soft control signal applied to the switch.

43. (Cancelled).

44. (Cancelled).

45. (Original) The controller of claim 42, further comprising a summing module coupled to the micro-controller, and configured to generate different signals to represent the first voltage and the second voltage.

46. (Original) The controller of claim 39, further comprising a rectifying module coupled to the inverter module, and configured to provide power to the inverter module.

47. (Original) The controller of claim 39, and wherein the inverter comprises a half-bridge inverter.

48. (Original) The controller of claim 39, and wherein the first voltage indicates a high speed excitation, and the first voltage indicates a low speed excitation.

49. (Original) The controller of claim 39, and wherein the electric machine comprises a multiple-tapped motor, and the first voltage represents one of a plurality of motor speed at one operating frequency.

50. (Original) The controller of claim 49, and wherein the one operating frequency is 60 Hz.

51. (Original) The controller of claim 39, and wherein the electric machine comprises a single speed motor, and the first voltage represents a motor speed at one operating frequency.

52. (Original) The controller of claim 51, and wherein the one operating frequency is 60 Hz.

53. (New) A method of controlling an electric machine using a controller, the electric machine comprising a rotor and a stator, the method comprising:

detecting whether power is present at a first node of the controller;

detecting whether power is present at a second node of the controller;

generating at least one signal based at least in part on the detecting acts; and

using a detected power to energize the electric machine when the at least one signal indicates power is present at at least one of the first node, the second node, and a combination of the first node and the second node.

54. (New) The method of claim 53, and wherein the controller comprises an inverter, and wherein using a detected power to energize the electric machine comprises

providing a detected power to the inverter,

the inverter generating an inverted power using the detected power, and

using the inverted power to energize the electric machine.

55. (New) The method of claim 53, and wherein the detected power comprises at least one of an unregulated power, a regulated power, and a combination of an unregulated power and a regulated power.

56. (New) The method of claim 53 wherein detecting whether power is present comprises detecting whether a voltage is present.

57. (New) The method of claim 53 wherein generating at least one signal comprises:

generating a first signal based at least in part on the act of detecting whether power is present at a first node of the controller, and

generating a second signal based at least in part on the act of detecting whether power is present at a second node of the controller.

58. (New) A system comprising:

an electric machine comprising a stator and a rotor; and

a controller electrically connected to the electric machine, the controller comprising:

a first node configured to receive a first power;

a second node configured to receive a second power;

a first circuit configured to detect whether the first power is present at a first node of the controller, detect whether the second power is present at the second node, and generate at least one signal, the at least one signal being representative of whether the first power is present at the first node and whether the second power is present at the second node,

a second circuit configured to receive the at least one signal and generate a switch control signal, and

a switch configured to selectively energize the electric machine based at least in part on the switch control signal, the switch using at least one of the first power, the second power, and a combination of the first power and the second power to energize the electric machine when the at least one signal indicates at least one of the first power is present at the first node, the second power is present at the second node, and a combination of the first power is present and the first node and the second power is present at the second node.